LABIBA FAIZA KARIM

• labiba.karim@northsouth.edu • karim.labibafaiza2002@gmail.com • labiba.faiza@ieee.org •
LinkedIn | GitHub | INSB

SUMMARY

Computer Science undergraduate with a Math minor, specializing in Quantum Computing, AI, ML/DL, MIPS, and Edge Intelligence. Gaining experience in research-driven development with a focus on efficient, real-world applications. Currently exploring noise reduction and hybrid systems in Quantum-Classical models. Strong grasp of low-level systems and high-level algorithms, with a forward-thinking yet grounded approach to solving complex problems.

WORK EXPERIENCE

Undergraduate Teaching Assistant   **May 2025 - Present**
Department of Mathematics and Physics (North South University)

- Provide one-on-one and group support to students, clarifying key mathematical and business concepts.
- Assist course instructors with administrative tasks and course material preparation.
- Evaluate quizzes and assignments with precision, adhering to established grading standards.
- Supervise examinations while upholding academic integrity and ensuring strict compliance with exam protocols.

Web Development Core Volunteer, IEEE NSU SB   **Apr 2024 – Present**
IEEE North South University Student Branch (INSB)

- Serving as a Backend Web Developer for the past year, contributing significantly to team objectives and technical advancements.
- Utilized advanced Python libraries for backend development, including email automation for INSB and meeting minutes integration.
- Proficient in frameworks such as Django and Flask, continuously enhancing skills in Git and other tools.
- Engaged in code reviews and brainstorming sessions with the team to identify and resolve errors efficiently.

EDUCATION

Computer Science and Engineering (B.Sc.)   **May 2022 - Present**
North South University

- Class of 2026 (Joined in Summer 2022)
- Relevant Courses: C, Java, Discrete Mathematics, DSA, Digital logic, DBM, Computer Architecture & Organization, Software engineering, Engineering Drawing, Pre-Calculus, Calculus I, Calculus II, Calculus III, Application of Calculus, Numerical Analysis,

Minor in Mathematics (DMP)
North South University

- Relevant Courses: Calculus I, Calculus II, Calculus III, Linear Algebra, Differential Equations, Numerical Analysis

PROJECTS

9X9: NanoWar   *Dec 23*
Language: Java

- Developed a modular 9x9 chess engine using OOP with an inheritance-based piece hierarchy.
- Designed an interactive Swing GUI with dynamic loading and smooth gameplay.
- Implemented exception handling and optimized resource management.

Design MIPS CPU and OS   *Nov 24*
Language: MIPS, Verilog, C, Digital Logic Design

- Designed a 32-bit single-cycle CPU with custom ISA and benchmark support.
- Developed an assembler in C++/Java for code translation.
- Built a basic MIPS OS with MAX, MIN, and MEAN functions.
- Implemented and tested the CPU in Verilog using LogiSim and ModelSim.

AgroExpert   *Apr 25*
Language/Tech Stack: Python, Django, HTML/CSS, JavaScript, SQL

- Designed a web-based Agricultural Expert System for crop and fertilizer recommendations using soil data.
- Integrated real-time weather and chatbot APIs for irrigation advice and user interaction.
- Planning AI/ML/DL integration for personalized recommendations and intelligent chatbot responses.

SKILLS

- **Programming:** Python, C, Java, HTML, CSS, JavaScript, PHP, GIT, DSA, SQL, Code testing, Debugging, Competitive Programming, Hardware Description Languages (ARC, 6809 and Verilog), ML, DL
- **Operating system:** Windows, Ubuntu, WSL
- **General Software:** MS Office Suite, Google Workspace
- **Writing Skills:** Secondary research, SEO, Technical Writing, Strong Vocabulary, Editing, Proofreading
- **Soft Skills:** Leadership, Problem Solving, Critical Thinking, Teamwork, Quick Learning, Time management, Insight.
- **Communication:** Public Speaking, Confidence, Feedback, Technological Communication, Openness, Active Listening

EXTRACURRICULAR ACTIVITIES

IEEE NSU Student Branch:

- A team volunteer on the Web development team
- Actively participating in workshops
- Joining sabbaticals organized by IEEE Societies.

Competitive Programming:

- CP in Codeforces and Leetcode.
- Participated in NCPC Bangladesh 2024

Mathematics Olympiad:

- Participated in University Mathematics Olympiads

Physics Olympiad

- 31st in Regional Physics Olympiad, Dhaka (2018)
- Participated at Dhaka Physics Olympiad training for the 2019 Regional Physics Olympiad, Dhaka

CERTIFICATIONS

- Basic Automation Workshop on Air Quality Monitoring System **(IEEE RAS)**
- Student Professional Awareness Conference 2024 **(SPAC 24 INSB)**

REFERENCE

Dr. Mohammad Abdul Qayum
Assistant Professor
Department Electrical and Computer Engineering
North South University
Dhaka, Bangladesh
Email: mohammad.qayum@northsouth.edu
Phone: +880 2 55668200 Ext: 6186

Md. Ishan Arefin Hossain
Lecturer
Department Electrical and Computer Engineering
North South University
Dhaka, Bangladesh
Email: mohammad.qayum@northsouth.edu
Phone: +880 2 55668200 Ext: 6193